THE
GEORGE WASHINGTON UNIVERSITY
NAVY GRADUATE COMPTROLLERSHIP PROGRAM

THE NAVY INDUSTRIAL FUND AT THE U.S. NAVAL GUN FACTORY

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January 13, 1956

PREFACE

The purpose of choosing this subject as a theme for a term paper is two-fold. It should satisfy a curiosity aroused during a shipyard overhaul period in 1953, at Mare Island, California, where I first observed the Navy Industrial Fund in operation. Secondly, and more important, it should improve my understanding of a new and highly successful "business approach" now in use at many large naval industrial activities.

On first contact, I was impressed with the transformation that had resulted after Mare Island Naval Shipyard had shifted from the conventional type of appropriation accounting and control to this new approach of the business world, known as the Naval Industrial Fund.

Basically, in this concept, goods or services are sold, instead of being transferred or given, to other units within or outside the Navy. The object is simply to conduct the operations of the activity on a self-supporting basis, while making a zero profit. The activity has working capital, an inventory account, and uses the double entry accrual system of accounting instead of the usual appropriation system of accounting common to most government activities.

In this paper, I have not attempted to outline the detailed procedures, methods, and organization of the Navy Industrial Fund. That would have required much more comprehensive knowledge than I possess. Rather I have tried to examine the general background that led to this portion of the National Security Act Amendments of 1949 - Public Law 216, known as Title IV, the principal features of the new Comptroller's Organization at the Naval Gun

Factory, and the highlights of its operation for the past eighteen months.

This period is entirely too brief to conclusively evaluate how well the Naval Gun Factory has achieved its objectives under the Naval Industrial Fund. The organization is extremely complex, the nature of its operations unique for a navy industrial activity. It develops and tests prototypes of all varieties of new ordnance equipment, rather than specializing in a few products as do most ordnance and large commercial industrial plants.

These unusual features, in addition to a continuing and difficult personnel problem in the Accounting Division, tried the patience of everyone while sound bases and procedures were being tried and developed since July 1954.

At this point I want to express my appreciation to Captain E. L. King, U.S.N., head of the Manufacturing Department, Mr. A.J. Jacobson, Head of the Department of Management, Planning and Review, and Captain R.B. Neyman, U.S.N., Comptroller, and members of their departments, who generously helped to clarify and expand my understanding of this subject.

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CHAPTER I

BACKGROUND AND PUBLIC LAW 216

Working Capital Funds.-- When "Working Capital Funds" in the Department of Defense were authorized and encouraged by the National Security Amendments of 1949, a relatively unnoticed but very significant step had been taken to improve the management of large industrial activities of the navy and other military services.[1] These funds were to be used to finance the inventories of supplies and the operation of industrial and commercial type activities. They were, and are, a distinct effort to insure more effective management, by adopting methods similar to those used by large commercial enterprises. They, along with the other budgetary and fiscal provisions of the National Security Amendments of 1949, should help eliminate much inefficiency, inadequate control, and unnecessary waste that had been continuously spotlighted by Congressional Committees, special commissions, and internal inspection groups of the services during and immediately after World War II.

Background 1945-1949.-- What were the conditions that centered the attention of Congress, special commissions, and the Secretary of Defense on the business management of the military establishment in the post-war period? Actually it was the cumulative effect of many forces. However, the principal and over-riding consideration was the unusually large size of the military establishment it would be necessary to support in the foreseeable future.[2]

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1. GALLUP POLL, Public Reaction to the HOOVER COMMISSION REPORT, May 5, 1946.

2. Arthur Smithies, The Budgetary Process in the United States (New York-McGraw Hill Book Co. 1955) p. 278.

The effects of this huge program was a subject requiring immediate and continuing attention if the nation's economy and available resources were to be maintained in a healthy condition.

Unlike similar post-war periods of the past when the armed forces became an insignificant fraction of their size in wartime, the uneasy status of the "Cold-War" made in necessary to maintain an Army, Navy and Air Force of unheard of proportions. With this one thought in mind, the objective of promoting economy and efficiency became paramount.

During the early part of World War II, the Truman Committee, headed by then Senator Harry Truman, did a notable job spearheading attention to the many instances of excessive costs, mismanagement and waste, both by war plants and military industrial activities.

By the end of World War II, both Congress and the Military establishment had been alerted. Both commenced studies of the vast and complex problem of improved management. For example, in 1945 while the Navy was investigating the tremendous problem of cataloguing millions of separate electronic spare parts, spare parts manufactured in 1926 were found in storage at Mare Island Navy Yard.[3] If instances such as this were typical, and they were, programs for the future had to insure that we were not buying things we already possessed. This pointed to one of the basic and vital elements that are necessary for improved management, an accurate and properly controlled inventory program.

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3. Testimony Mr. W. J. McNeil, Special Assistant to Secretary of Defense, Hearings Before Sub-Committee of the Committee on Appropriations United States Senate, 80th Congress, First Session p. 17.

Congress itself supplied a vast amount of evidence of isolated instances of poor management and ineffective control. Generally, these were "after the fact" revelations, and while responsible officials were required to explain, it did not help to improve the general overall performance to a marked degree. A few cases were cited by Senator L.P. Saltonstall of the Eightieth Congress:

> (1) Project Order Number 1-47-RESEARCH Navy for $25,000., issued July 1, 1946 for development of special devices, had $124,885 expended against it as of December 31, 1947.
> (2) Investigation revealed that it was common practice to develop the great bulk of project orders in May and June of each fiscal year in order to avoid losing money that had been appropriated. A few glaring areas of this widespread practice in the Navy Budget were,
> (a) Marine Corps committed 82% of project orders in June 1947;
> (b) Bureau of Medicine and Surgery committed 71.2% of its project orders in June 1947;
> (c) Research Navy, committed 33% of its project orders in June 1947;
> (d) Bureau of Yards and Docks committed 25% of its project orders in June 1947.[4]

Hoover Commission.-- While the high level of defense spending necessitated continual attention toward hundreds, if not thousands, of instances of this nature, Congress passed Public Law 162, approved July 7, 1947, which established the Commission on Organization of the Executive Branch of the Government. This is now popularly known as the Hoover Commission. Mr. Ferdinand Eberstadt, long time friend and former business associate of Secretary of Defense James Forrestal was appointed Chairman of the National Security Organization Task Force. Known principally as one of the leaders of the Navy's losing fight against the National Security Act of 1947, he was respected for his complete objectivety and thorough knowledge of the Defense Establishment. Other members of the

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4. Hearings before the Sub-Committee of the Committee on Appropriations United States Senate, Eightieth Congress.

committee reflected the same high caliber as Mr. Eberstadt. In the period of its life, the committee interviewed over two hundred and sixty leaders in military, business and civilian fields. Basically the Task Force was concerned with The National Military Establishment and the agencies connected with it, such as, The National Security Council, The Central Intelligence Agency and the National Security Resources Board.

In January 1949 when the committee's report was presented to Congress, for the purpose of this paper, it was divided into two principal parts.[4] The first section dealt basically with strengthening the powers of the Secretary of Defense. The second part dealt with provisions for promoting economy and efficiency by establishing uniform budgetary and fiscal procedures and organizations. Due to heated controversies centering about the powers of the Secretary of Defense and related programs of the seventy group Air-Force, and scrapping of the navy's supercarrier, the provisions for promoting fiscal and budgetary reforms received relatively little Congressional or public attention.[5] In effect the Congressional Committees listened to, and almost unanimously agreed with the presentations given by Mr. Hoover, Mr. Eberstadt, and Mr. W.J. McNeil, the three principal authorities on the recommendations presented.[6] One of the specific highlights presented related to the various sources of appropriations for the Bethesda Naval Medical Center. Appropriations came from the Bureau of

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4. COMMISSION on ORGANIZATION OF THE EXECUTIVE BRANCH OF THE GOVERNMENT Appendix G, January 1949.
5. Elias Huzar, The Purse and the Sword, p. 177.
6. U.S. 81st Congress 1st Session Senate Report 366, Calendar 356, NATIONAL SECURITY ACT AMENDMENTS of 1949, p.11.

Medicine and Surgery, Bureau of Naval Personnel, Bureau of Supplies and Accounts, Bureau of Yards and Docks, and still other parent activities. To find out what it cost to operate the hospital, it would have been necessary to go through a maze of intricate and involved accounting. At no one point in the Navy Department could one find in a single entry what the cost was to run the operation, particularly in time to be of value to top management. Facts such as this received the attention they merited, particularly because of the pretige of Ex-President Hoover. It is interesting to note that Mr. W. J. McNeil and Secretary of the Navy Forrestal covered this same subject at least two years prior to this time when they developed the Navy's Alternate Budget, printed in the Annual Budget of the United States Government, Fiscal Year ending 1948.[7] The aim of this alternative proposal was to obtain an appropriation structure which would enable officials to identify the whole cost of individual programs from single appropriation titles. This would mean better fiscal management and more effective budget presentation.

Public Law No. 216.— On August 10, 1949 the goal of Mr. Hoover, Mr. Forrestal, Mr. Eberstadt, Mr. McNeil, and others devoted to the task of improving management in government, took a significant step forward when the National Security Act Amendments of 1949, Public Law 216-81st Congress was approved. The main provisions of Title IV, as summarized by Senator Tydings were:

> The title contains various provisions, all of which are intended to implement the authority over the budgets of the military services conferred upon the Secretary of Defense under Section 202 (a) of the

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7. The Budget of the United States Government Fiscal Year Ending June 1948, pages 689-725.

National Security Act. The title provides, among other things, for the appointment of a Comptroller in the Office of the Secretary of Defense, for the appointment of comptrollers in the military departments and for comparable organization and procedures in the budgetary and fiscal matters in the office of the Secretary of Defense and in the Military Departments.

The title also provides for the presentation of budgets in a form that clearly reflects the costs of performing the activities of the Department of Defense and for the conduct of authorized programs in the same manner. It contains authority for certain program adjustments, and gives the Secretary of Defense control over requests for legislation which would authorize new appropriations. It also contains provisions designed to prevent overdrafts and deficiencies. Among its other provisions are authority for the organization of inventories of the military departments into stock funds, for the operation of industrial and commercial type activities as integral working units-on the basis of an adequate capital structure, for industrial management funds to facilitate the carrying out of joint and special operations, for uniform terminologies, classifications, reporting systems, and accounting procedures, and for reports of property.

Whatever may have been the differences of view on other matters expressed by those who testified on the 1949 Amendments to the National Security Act before the Armed Services Committee of the Senate, there seems to have been unanimous agreement that the Secretary of Defense should have effective authority and control over military budgets and over fiscal procedures. This authority is conferred upon the Secretary of Defense by the provisions of Section 202 (a). The new TITLE IV is intended to implement it. Its provisions are designed to place the operation of the Defense Establishment on a sound budgetary and fiscal management basis.[8]

Specifically, on the subject of Working-Capital Funds, Section 405 (a) and (b) provides:

(a) In order to more effectively control and account for the cost of programs and work performed in the Department of Defense, the Secretary of Defense is authorized to require the establishment of working-capital funds in the Department of Defense for the purpose of-

(1) financing inventories of such stores, supplies, materials, and equipment as he may designate; and

(2) providing working capital for such industrial type activities as provide common services within or among the departments and agencies of the Department of Defense, as he may designate.

(b) The Secretary of the Treasury is authorized and directed to establish on the books of the Treasury Department at the request of the Secretary of Defense the working-capital funds established pursuant to the authority of this section.[9]

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8. U.S. 81st Congress 1 Session - Senate Report No. 366, Calendar 356, National Security Act Amendments of 1949, p. 10.

9. U.S. 81st Congress 1 Session - National Security Act Amendments of 1949 - Public Law 216. Sec. 405 (a) and (b).

CHAPTER 11

INSTALLATION OF THE NAVY INDUSTRIAL FUND

Considerations.-- The Navy Industrial Fund was established at the Naval Gun Factory July 1954 in accordance with Section 405 of the National Security Act Amendments of 1949, Public Law 216, approved August 10, 1949. It was the fourth ordnance activity to adopt this system of business management. This was preceded by the Naval Ordnance Plant at York, Pennsylvania, the Torpedo Plant at Forest Park, Illinois, and the Ammunition Plant at Indian Head, Maryland. At that time the move was unique because the Naval Gun Factory was not only the largest and by far the most complicated industrial plant under cognizance by the Bureau of Ordnance, but was a "Job-Order" activity rather than a plant specializing in the production of one product, as were the three other plants. These plants, generally speaking, are adoptable to assembly line production methods, and can readily adopt methods of standard costs in helping to analyze their production methods. On the other hand, the Naval Gun Factory, because of its wide range of production facilities, and unique skills in almost all phases of ordnance production, is used by the Bureau of Ordnance to develop the initial prototype models of new ordnance equipment, and to test models developed and produced by other ordnance activities and commercial companies. Thus, at the outset, its size, wide diversification and lack of assembly line techniques promised to make the task ahead more difficult than that experienced by its predecessors. Later, it will be important to keep this in mind when analyzing the first eighteen months performance under the Navy Industrial Fund.

Numerous Missions.— In order to better understand the variety and scope of the task performed at the Naval Gun Factory, the following is the list of MISSIONS it is assigned by the Bureau of Ordnance:

1. Design, develop, manufacture, assemble, inspect and test ordnance equipment including guns and mounts of all calibers and types, aviation ordnance, torpedo tubes, rocket launchers, projectors, fire control equipment, optical equipment, cartridge cases, spare parts, tools and accessories and other ordnance material as directed by the Bureau of Ordnance.

2. Contract for the manufacture of equipment and materials and the procurement of specialized services from private industrial concerns.

3. Apply product and production engineering to the manufacture of ordnance.

4. Operate pilot production lines.

5. Serve as a principal source of protypes of new weapons.

6. Overhaul, modify, recondition, maintain and store ordnance material.

7. Operate the principal Naval Ordnance Gage Laboratory and administer the Final Acceptance Inspection Gage Program.

8. Prepare and provide for the security, storage and reissuance of Industrial Preparedness Studies; make analyses to associate special tooling in existence with manufacturing processes set forth in the studies.

9. Provide technical consultation service to other activities and to private industry.

10. Maintain and operate laboratory facilities for the examination, development, test and standardization of materials and techniques in accordance with established Bureau of Ordnance policies.

11. Train Naval Inspectors of Ordnance for other activities as directed by the Bureau of Ordnance.

12. Prepare and maintain manufacturing records, drawings and reproduction data.

13. Administer storage of and maintain accountability records for patterns stored at NIROP Canton, Ohio.

14. Prepare and distribute Ordnance technical data, instructions, reports, standards and pamphlets not included in Navy Distribution System.

15. Perform the functions of a primary supply activity for general stores material in the General Stores Supply System.

16. Perform the functions of a "Primary Stock Point" in the Ordnance Supply System for spares, tools and accessories in designated stock classes.

17. Perform the functions of an East Coast "Distribution Point" for fire control complete equipments in the Ordnance Supply System.

18. Perform the functions of a "Secondary Stock Point" in the Electronic Supply System for electronic materials support.

19. Receive, identify, preserve, store and issue ordnance material.

20. Perform Naval Supply functions relative to receipt, packing and shipping of household effects for the Washington area.

21. Dispose of scrap, salvage, surplus, and waste materials for all of PRNC.

22. Provide berthing, waterfront service and minor maintenance for naval vessels operating within the Potomac River Naval Command.

23. Discharge responsibilities assigned for Bureau of Ships controlled electronics equipment ashore and afloat within PRNC and SRNC and in other naval districts as assigned.

24. Store, overhaul and modify torpedoes.

25. As directed by the Bureau of Ordnance, perform in a varying degree, from complete to limited, supporting services such as medical, supply, fiscal, disbursing, public works, fire protection, security, government housing, custodial, mail, telephone, budget control, and equipment repair for eighteen directly dependent naval activities and approximately sixty miscellaneous activities of the military establishment and the national government.

26. Administer the Ordnance Technical Museum.

27. Administer and operate the Ammunition Stock Recording System and its collateral functions including the preparation and maintenance of the Ammunition Code Listings, Ammunition Standard Unit Price List and other pertinent publications.

28. Provide support for the local Board of U. S. Civil Service Examiners.

29. Develop and apply statistical quality evaluation techniques in accordance with established Bureau of Ordnance policies.

30. Provide logistic support, as necessary, to the inactive facilities at Piney Point Annex.

NIF Handbook.— Prior to granting the charter, selected representatives of the Navy Comptroller's Office, the Bureau of Ordnance, and staff of the Naval Gun Factory combined in a group to study the organization, analyze its problems, and draft a Naval Industrial Fund Handbook for particular use of this activity. While the handbook resembles a large telephone directory, and is very imposing in appearance, it does not contain detailed descriptions of methods and procedures relating to accounting currently in effect, unless these methods or procedures require modification to comply with the prescribed custom-built accounting system. Basically the handbook describes the components of the organization, particular functions of each, and states that the "custom-built" cost accounting system shall observe the accrual basis of accounting and employ the double-entry method of bookkeeping.

Duties of Comptroller.— The Comptroller who implements and administers the factory's financial operations under the working-capital fund is directly responsible for budgeting, accounting, statistical reporting, internal accounting control and for the administrative organizational structure and managerial procedures relating to such responsibilities within the Naval Gun Factory.[10] In addition, he acts as an advisor and consultant to the Superintendent of the Naval Gun Factory on financial policy matters, program planning and related areas

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10. Naval Industrial Fund Handbook for the U.S. Naval Gun Factory, p.1-8.

of financial administration. And lastly, he implements the financial provisions of the Navy Industrial Fund Charter granted to the Naval Gun Factory.

Under the Comptroller, are four main divisions, Budget, Accounting, Disbursing and Statistical. At the present time plans are being executed to add another division - Machine Accounting - in order to supplement the work of the Accounting and Disbursing Division, and to be of more service to the Manufacturing Department especially in preparing detailed standards for the numerous small jobs for which no accurate standards now exist.

Budget Division. — The Budget Division, which, until July, 1955 operated under a rigid annual budget, adopted a new and more flexible system and has achieved excellent results in the short period of operation. Basically, close and continuing coordination is maintained between the budget staff and all of the various thirty-seven "Cost-Centers" distributed throughout the many shops in the Naval Gun Factory. The budget, which is prepared annually, is revised on a departmental level quarterly in order to conform to existing work load and conditions. Each Cost-Center is furnished weekly statements of controllable expenses and productivity, expressed both in relation to each other, and in relation to the budget plan. This brief, but important information, in tabulation run forms, is given two working days after the close of the week reported on, and serves as the principal tool of financial management control. With this information, cost-centers are able to keep accurate and up to date information for comparison with their quarterly budget figures. In addition, each cost-center receives individual monthly statements. This analysis is a further aid in helping to identify significant variances which require more detailed in-

vestigation, or point up the need for corrective action in the future. Included in this analysis also are comments on factors affecting the financial condition of the shop, which are available to the Comptroller Department, but which are not readily apparent from the figures presented.[11] This information is shown in graphs and charts with explanations as to their significance.

This fiscal year, to repeat, budgeting control is on a quarterly basis. While an official annual budget is prepared, previous experience has shown that it is preferable and more realistic to place the emphasis on a quarterly approach at the shop and departmental level, since the individual work load at cost-centers can be reliably predicated only a quarter in advance. Thus, the individual cost-center statements include a comparison of actual and budgeted costs only for the current quarter. Gains and losses from previous quarters will be carried forward in each productive cost-center in order to insure that each cost-center will break even in the long run. The overhead rate for each cost-center is adjusted quarterly, and is based on the budget for the ensuing quarter. This normally includes an adjustment to compensate for a prior gain or loss.

The annual budget, likewise is prepared from the cost-center level with close coordination and assistance from the budget staff. The budget staff obtains policy decisions from top management on such relevant matters as overall level of employment, whether there will be a retrenchment or expansion, overtime and nature of the predicted work load. With this information the budget staff produces estimates which show the distribution of general and administrative overhead, and total labor hours. Each cost-center then prepares a budget

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11. Monthly Financial and Operating Statement, U.S. Naval Gun Factory Washington, D.C. July 1955 p. 2.

for its anticipated work load. Later, in a combined session, each budget is reviewed and discussed with the budget representatives, and adjustments are made until final agreement is reached. In this discussion particular attention is given to the following points:

(1) Is it in accordance with policy decisions?

(2) Are requirements fully and reasonably covered?

(3) Are production cost-center estimates balanced with anticipated work load?

(4) Are service department expenses balanced with level of activity?

(5) Are prices increasing or decreasing?

In discussions with personnel of cost-centers while reconciling differences of opinion, it is the policy not to pressure the individual managers into accepting the version of the Budget Division. A healthy constructive attitude is taken which appears to have been beneficial to all concerned. The budget officer mentioned, with noticeable pride, that the latest budget had been completely accepted by both sides before it was submitted to top management for approval.

As mentioned earlier, coordination with cost-centers does not stop with approval of the budget. Weekly tabulations of expenses are sent to each cost-center to provide them with a current and timely report of costs to date. This is supplemented monthly with a detailed statement of productive cost-center operations, accompanied by simple graphs and charts and a brief analysis from the Comptroller's point of view.

The latest monthly statements, covering September, were not submitted until the middle of November. This noticeable time lag was due to extensive

changes made in completely revising the overhead expense accounts and the cost-center numbering system. Now, it is expected that this delay will be reduced appreciably in the future, and the report will have more value at the cost-center and departmental level.

In concluding this description of the functions of the Budget Division, the following common practice is cited to illustrate the degree of cost-consciousness that pervades at the cost-center level. When it is anticipated that work load will decrease for a future period, not only are shop personnel shifted to cost-centers with heavier work loads, but supporting administrative personnel as well. This, as it is now well understood, not only reduces Direct Labor Cost for the cost-center concerned, but the General and Administrative Overhead Expense as well. This was unheard of several years ago.

This, in part, has been brought about by improved budget procedure, which is slowly convincing personnel of all departments of its inherent worth. Also partly responsible for this change in attitude is the competition from private industry and other ordnance activities. Personnel at all levels understand the basic fact that non-productive labors and unnecessary overhead expense are costly. An unpleasant reminder of this condition is the very obvious fact that the Naval Gun Factory is currently operating at approximately forty percent capacity, with some shops noticeably below that level.

Accounting and Disbursing.— The second main division under the Comptroller in the Navy Industrial Fund method is the Accounting and Disbursing Division. It supervises the double-entry accounting records maintained on the accrual basis, and generally performs all the usual operations of an accounting unit. It is divided into the following branches:

(1) General Accounting Branch which records all financial transactions and supervises the flow of primary financial documents to assure accuracy and promptness of reporting.

(2) Bookkeeping Section which maintains the general ledger, subsidiary ledgers, and prepares statements of financial condition, operating statements, and other financial reports.

(3) Payroll Section maintains time, service and leave records, and prepares payrolls. It does not maintain time records for labor distribution purposes. This is one function the Manufacturing Department desires from the Comptroller in order to improve its costing information. This is now done within the Manufacturing Department, by supervisory and administrative personnel who manually complete individual time cards for standard job orders. This information is collected, analyzed, etc. and pertinent data is sent to cost accounting branch and shop supervisors for information and records. Under this system, which was revised and brought up to date in April 1954, with the purpose of analyzing cost of products more efficiently, significant improvement has been made. For example, prior to installation of the Naval Industrial Fund, a specific gun barrel was estimated to cost $459.00. Now, due to improved methods of costing and engineering techniques, the current price is $195.00.

Undoubtedly, if time records were maintained by machine accounting in the Comptroller's Department, far more accurate and detailed information would by available for analyzing and for estimating future requirements. This particular subject will be discussed in more detail under the Cost Accounting Branch.

Property Accounting Section maintains the financial records of materials

carried in stores accounts and renders Navy Supply System returns. It also maintains plant account records.

(4) The Appropriation Accounting Section, which in effect can be considered an additional "Accounts Receivable Section" maintains obligation, allotment and project order records for the Naval Gun Factory and assigned activities. This is, in effect, an additional assignment generally not understood as being under the scope of the Naval Industrial Fund, since it is appropriation accounting, and is also a service provided for satellite activities. This may not appear significant, but the preparation of appropriation accounting reports for all activities, in addition to other duties, require the services of thirty-four full time employees. In essence, it may be considered that the Double Entry accounting method required for Naval Industrial Fund, is superimposed on the system it was intended to replace.

(5) The Cost Accounting Branch primary mission is to develop procedures to assure accurate and timely recording of costs. From this it develops cost standards, maintains job order cost ledgers, and audits labor and material distribution of job orders.[12] In addition it prices materials produced upon receipt from manufacture. It relates expense budgets to forecasts of factory production, and develops data for establishment of rates for application of overhead.

In this last respect, since the inception of the Naval Industrial Fund, significant progress is very obvious. Prior to June 1954 under the old appropriation accounting system, overhead was nothing more than an estimate. Today,

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12. Navy Industrial Fund Handbook for the U.S. Naval Gun Factory, 1954 p.1-14.

all tenants within the Naval Gun Factory have been allocated and pay a fair share of the expenses for the space occupied and services received. For example, the Severn River Naval Command, the Supply Activitity for Severn River Naval Command, (apart from the Supply Activity which directly supports the Naval Industrial Fund), the Naval Reserve Program, and Marine Corp. Unit, to mention the principal tenants, all pay for space and utilities used based on equitable and consistent rates established by costing methods.

This system is carried to its logical limit for even the small tenants. The Bureau of Aeronautics, the Office of Naval Material, and the Bureau of Ordnance have testing and design engineers attached to the Naval Gun Factory in connection with projects of mutual interest. The services and expenses of these engineers is now costed primarily to the parent activity, except for portions of their work which is directly beneficial to the Naval Gun Factory.

In this area of overhead costs considerable progress has been made. The differences of opinions in regard to the rates established have been settled, and now it is possible to budget within a two percent margin in anticipating costs in this category. It is a significant point, and establishes a fine standard to point for in budgeting for other expenses.

When discussing the functions of the Payroll Section, it was stated that the Manufacturing Department desires to have the Comptroller's Department assume the time-keeping function for labor distribution purposes. This would not only free the Manufacturing Department of much administrative detail, but would give more accurate and detailed information than is available at present. Since a Data Computer is now being contemplated under the newly established Tabulating Division, this appears to be a logical development in the future.

In the past eighteen months it would have been an impossible burden for an already over-worked and inexperienced accounting division. This particular subject relating to difficulties experienced in converting from appropriation accounting to the double entry system required by the Navy Industrial Fund will be discussed in Chapter Three, under the heading of MAJOR PROBLEMS.

Statistics Division.— The third major component of the Comptroller's Department is the Statistics Division which prepares statistical reports, graphic presentations of fiscal operations, and operates a work measurement program in coordination with other departments of the Naval Gun Factory.

Machine Accounting Division.— The fourth, and last major component, is the newly created Tabulating Division. The duties performed by this unit have increased in importance to such an extent that it was decided to expand it to a division level.[13] The following duties are performed:

(1) Devises methods for compilation of reports, statements and other statistical data for reproduction on tabulating equipment.

(2) Devises forms and develops local procedures to assure accurate and timely reporting.

(3) Processes punched cards on tabulating equipment to produce payrolls, checks and accounting reports.

(4) Accumulates by EAM operations detail records of material and labor expenditures.

(5) Summarizes detail labor and material expenditures by account and job order, and tabulates for administrative, budget and accounting purposes.

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13. Naval Industrial Fund Handbook for the U.S. Naval Gun Factory, p.1-16.

(6) Prepares tabulated statistical and financial reports as required.

(7) Applies overhead and leave costs to job orders.

As mentioned previously, the weekly statements of controllable expenses and productivity, expressed in relation to each other and in relation to the budget plan was adopted in July 1955, and is now the principal tool of financial management control. This timely information is given to the shop-masters weekly to enable them to keep a continuous and accurate record of controllable expenses, and also enable them to take prompt corrective action if any particular item is out of control.

At present, test runs are being conducted on a data processing machine. It is unofficially estimated that a period of nine months will be required before it will be ready for constant use in helping not only the General Accounting Branch, but all departments of the Naval Gun Factory.

The Manufacturing Department, for example, wants accurate and complete costing information for all spare parts that make up the intricate automatic guns and gun control systems being developed. The magnitude of this task is evident when it is realized that one automatic model alone contains over five thousand parts. Properly computing and allocating the costs to all these components is indeed a job for a data computer. It would appear that the diversification is so vast that the problem would be difficult even for machine accounting. However, this is the field of refinements. Undoubtedly the data computer will be employed initially to help solve the more basic and accounting problems.

CHAPTER III

MAJOR PROBLEMS

General.— The difficulties which were confronted, some of which are major obstacles, will necessarily need to be eliminated before the full benefits of operations under the Navy Industrial Fund may be realized. Some of these problems can be solved at the local level, but others are outside the jurisdiction of the Superintendent, Naval Gun Factory and involve policies that need to be determined at higher level. The three basic and continuing problems are:

(1) A very difficult civilian personnel situation.

(2) A continuing burden of appropriation accounting and its conflict with the Naval Industrial Fund double entry system.

(3) Administrative regulations which hamper the intent of management responsibilities under the fund.

Personnel.— At the outset a serious personnel problem was evident. The bulk of accounting personnel, obtained from the former Fiscal Department, where the appropriation system of accounting was employed, did not understand the double entry system required by the Navy Industrial Fund. This was aggravated by any number of factors. The loyalty of civilian personnel was still with their former department where they had been trained and understood the scope of their duties. In the Comptroller's Department they felt insecure. They did not understand this entirely new approach to accounting problems, and as a result felt that their jobs were in jeopardy. Similar to most employees in businesses all over the United States, they were suspicious of the word "Comptroller." These

suspicions were magnified when misunderstandings developed. The average employee understood chances of advancement would be better in the Comptroller's Department because of the critical shortages in personnel. Actually in eighteen months under the Navy Industrial Fund, only a small percentage of personnel have been advanced, far below what had been the rule in the former Fiscal Department.

The promotion policy in the Comptroller's Department was strict. Unless standards were met, personnel were not considered for promotion, and the requirements set down in the Civil Service Regulations had to be fulfilled. The practice of requesting waivers for deserving personnel, as had been common in the Fiscal Department, was not followed. This aspect alone painted a very gloomy picture from the standpoint of individuals who had transferred from the former Fiscal Department.

Training.— In addition to this, the Comptroller's Department was poorly prepared for the shift. At the time of granting the charter to operate under the Naval Industrial Fund, nothing significant had been accomplished in the way of a training program to ease the transition to the double entry system of accounting. As soon as this deficiency became apparent, training and schooling of personnel commenced in a positive manner. However, the program was slow in development, and had a long time to go before results were apparent. In the meantime, morale was poor. The new type of accounting continually presented problems that were not covered by written procedures or the handbook. In order to prepare the monthly statements, the harassed and inadequate Accounting Section was continually late in preparing the monthly statements. More often

than not, they were sent back for revision because they were not in agreement with those of the Cost Accounting Branch. To add to the confusion, many different accounting procedures and formats for financial statements were tried and discarded. This was the pattern for the first twelve months under the Fund. Since July 1955, the situation has improved considerably, and formats for statements are adequate for effective management.

In retrospect, it is evident that the basic error was to attempt such a vast and complex project without having the assurance that the accounting personnel were properly trained for the double entry system of bookkeeping. The few supervisors, and professional accountants available were entirely inadequate. It would appear mandatory to thoroughly survey the qualifications of personnel, and to institute a comprehensive training program at least six months before a changeover to the Naval Industrial Fund is made. Had this been done earlier in this instance, there is little doubt that the problems would not have been so serious and morale of the personnel would have been noticeably better.

Supervisors.— In the area of supervisory personnel, it has been difficult to obtain adequate classification grades commensurate with the requirements of Civil Service. The Naval Gun Factory has been particularly handicapped in this regard because, being a field activity in the Washington Area, it is in competition for accountants with government departments where the grade structure for civil service personnel is invariably higher.

As an example, the Internal Review Program, which is one of the most effective aids to good internal management, is in reality only a little better

than a paper organization. This is directly attributable to the fact that a GS-12 is the highest rating that can be offered for this position in the professional accounting series. As it is well known, there is a general lack of qualified personnel who can adequately perform this function, and at the same time meet the rigid and inflexible technical qualifications required for this series. A higher grade structure, combined with a relaxation of technical requirements to permit selection of a broader field appears to be necessary to obtain competent personnel for this field. Another example of the same type, which is retarding progress is in the Machine Accounting Division. This division is going to relieve the accounting division of much of its troubles, and provide additional service to other departments, yet the top job classification for a civilian is GS-9.

Appropriation Accounting Burden.— The second major problem concerns the continuing burden of appropriation accounting which is contrary to the general intent of the Navy Industrial Fund. One of the original ideas was to abandon the appropriation accounting system in order to have better management control. In maintaining these accounts for the Bureau of Ordnance, the Naval Gun Factory is in effect continuing the old appropriation accounting system while superimposing the new system on it.

This necessitates maintaining records and furnishing reports by appropriation subhead, budget activity, project order as allotment, expenditure account and object class. Some of these reports are rigid as to date of submission, which in turn causes delays in the preparation of essential internal management reports.

Undesirable Restrictions.— The third problem concerns the restrictions placed on management which weaken management's authority in implementing internal financial operations. For example, approval of the Bureau of Ordnance is required for each structural repair costing in excess of five thousand dollars even though such repairs are financed through the Navy Industrial Fund, and allocated as an overhead cost. This requires the preparation of detailed justifications, delays the commencement of essential work, and conceivably increases the final cost.

This limit of five thousand dollars appears inordinately low. The Du Pont Company allows their Division Managers a top limit of $100,000. in construction work.[14] Since the position of Superintendent of the Naval Gun Factory is comparable to a Division Manager in the Du Pont Company, it would appear that more latitude in decisions of this nature be given the Superintendent of the Naval Gun Factory. This again is in line with the original concept of the Navy Industrial Fund, namely, making each unit self-sufficient, and making management responsible for the performance of its activity.

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14. Notes from Lecture by Mr. A. L. French, Assistant Comptroller, Du Pont Company to Comptrollership Class.

CHAPTER IV

ACHIEVEMENTS

General.— The adoption of the Navy Industrial Fund with its associated system of accounting and principles of management, in spite of the complex personnel problem in the accounting branch, was one of the most significant contributions towards real progress made at the Naval Gun Factory in many years. Not all the major improvements that will be noted are entirely the result of operations under the Navy Industrial Fund, but unlike the previous system of appropriation accounting and management, the Fund system clearly showed the direction and created the climate for improvements.

Probably the least noticeable but most important contribution was the establishment of sound bases for future development. As noted before, continual changes and improvements were necessary in procedures and streamlining of financial statements in spite of the depressing effect it had on morale. As an example, the combined present monthly statements of the cost-centers are models of simplicity and clarity. These statements tell the story accurately, completely and clearly in summary form understandable to the supervisors and shop managers who use them as an effective and working tool.

Likewise, the Tabulating Section, has gradually increased in size, and usefulness until it now has been changed to the Machine Accounting Division. It's most effective product is the weekly statements of controllable expenses and productivity that serve as the principal tool of management control. These reports are timely, in that they are generally distributed within two working days of the close of the week reported on. This gives everyone in the

organization, from the supervisors up to management, timely information on controllable expenses in order that effective corrective action can be taken if necessary.

However, the most important development in this department is now in the experimental and testing phase. That is the installation of Model 650 IBM Data Computer. Unlike the serious personnel situation that developed at the outset of shifting to the Fund, this particular development has been thoroughly planned, and is now in a thorough experimental and training phase. This should require another nine months of development before it is ready to take its place in the organization. At that time it should not only relieve the overburdened accounting section of much of its work, but improve the quality and timeliness of its reports. It will also be utilized to supply detailed cost and manufacturing data that has never been available until now.

Use of Budget.— Undoubtedly, the most conspicuous progress made has been the greater awareness and utilization of the budget as a tool of management in the determination of requirements and evaluation. Under the previous system of appropriation accounting, the budget for shops and units was rigidly fixed. The shop masters had to live within it, whether it was realistic or not. Under the new budget system, the supervisors and shop masters actively participate in drafting the budget. Everyone is aware of one fact, the budget starts at the cost-center level, with the best estimates management can supply. Then it is refined and adjusted in close cooperation with the Budget Division. Lastly it is controlled by adequate and timely communications between the Comptroller's Department and the shop. This permits continuing analysis and revision as required.

Cost Consciousness.— The third significant change noted since the inception of the Fund is the increased cost consciousness on the part of shop personnel, primarily because of the use of shop overhead rates.

Under Appropriation Accounting, this was not necessary because of the diversified sources of funds. Now everything has been allocated in proportion to the service received. Space, utilities, general administrative services have all been segregated into their proper categories. This realistic costing program, has driven home a sense of economy in a realistic way. Equipment, space, services, and people must be utilized if they are to be effective. If not used effectively, costs will rise for the individual cost-center, not hidden in a collective account, because under the Navy Industrial Fund non-industrial costs have very effectively been separated from industrial costs.

Overhead Costs.— In this area of overhead costs, tremendous strides have been made in anticipating accurate estimates. It has been possible to estimate these costs within two percent for budgetary purposes. As yet, the costs of operations cannot be predicted with this accuracy, but estimates for individual progress orders have far more accuracy than was possible previously. As more accurate data becomes available, now that overhead items have been effectively segregated, estimates in this area will undoubtedly improve.

Accurate Estimates.— Lastly, it is now possible to give more realistic estimates of items produced. This end product is more important today than ever before because of the competition with other ordnance plants and private industry. When bidding for work, especially the large orders, accurate estimates are essential. If too much tolerance is allowed because of poor or in-

accurate estimates, the contract will go to another bidder. On the other hand, if a contract is awarded based on a poor estimate, this will be directly reflected in the financial position of the Naval Gun Factory. Thus there is an acute awareness of the absolute necessity for realistic costing of items produced. Unfortunately, because of the size, complexity and wide diversification of items produced, this puts the Naval Gun Factory at a tremendous disadvantage when in competition with assembly line specialty plants. However, with the aid of the increased cost information that should come with increased efficiency and a more comprehensive costing program, the quality of estimates should continue to become more accurate and detailed.

These achievements are not as yet measurable in terms of financial savings. Many other improvements are planned. The entire process, especially from here on, should be an evolutionary one, and patience and perseverance will be needed to overcome the new problems as they arise.

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